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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
NIU, XINNING	

ART UNIT	PAPER NUMBER
2828	

NOTIFICATION DATE	DELIVERY MODE
11/14/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/563,811	MATSUMURA ET AL.	
	Examiner	Art Unit	
	XNNING NIU	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-16 and 18-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-16 and 18-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/13/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 4, 5, 13-16, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tojo et al. (2004/0105473) in view of Kume et al. (2004/0213315) and Kozaki (2002/0053676).

3. Regarding claim 1, Tojo et al. disclose: a nitride semiconductor layer that has a n-type semiconductor layer (23), an active layer (25), a p-type semiconductor layer (27) laminated on or above a substrate (11), and has a stripe shaped waveguide region for laser light (Figure 1, [0031]-[0033]); end surface protective films (43, 44) on the both end surface of resonance sandwiching the waveguide region (Figure 1, [0038]), end surface protective film (43) has a low reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]); at least one of the end surface protective film (43, 44) covers the stripe shaped waveguide region or an emission side end surface of resonance (Figure 1, [0031]-[0033]). Tojo et al. do not disclose: a nitride semiconductor substrate, luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the

emitted light, and at least one of the end surface protective film have a high reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region. However, Kozaki discloses: GaN substrate (101) (Figure 1, [0142]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by growing the laser device on a GaN substrate in order to prevent a large number of dislocations from forming during growth. Kume et al. disclose: absorbing layer (15A) that absorbs light emitted from the active layer (17) (Figure 1, [0067]). It is inherent that the absorbing layer will emit luminescent radiation after absorbing light from the active layer and the emitted radiation will be a longer wavelength than the wavelength of the emitted light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by incorporating an absorbing layer into the substrate in order to prevent the leakage of spontaneous emission. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by modifying the reflectivity the one of the protective films so that the reflectivity is higher for the wavelength of the luminescent radiation in order to prevent the leakage of spontaneous emission.

4. Regarding claim 2, Tojo et al. disclose: end surface protective films (43, 44) located on the end surfaces both on the emission side and the rear side (Figure 1, [0038]).

5. Regarding claim 4, Tojo et al. disclose: single layer reflective film (Figure 1, [0038]).

6. Regarding claim 5, Tojo et al. disclose: a nitride semiconductor layer that has a n-type semiconductor layer (23), an active layer (25), a p-type semiconductor layer (27) laminated on or above a substrate (11), and has a stripe shaped waveguide region for laser light (Figure 1, [0031]-[0033]); end surface protective films (43, 44) on the both end surface of resonance sandwiching the waveguide region (Figure 1, [0038]), a second end surface protective film (44) having a high reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]), end surface protective film (43) has a low reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]); the emission side end surface protective film (43) covers the stripe shaped waveguide region or an emission side end surface of resonance (Figure 1, [0031]-[0033]). Tojo et al. do not disclose: a nitride semiconductor substrate, luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light, and at least one of the end surface protective film have a high reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region, the emission side end surface protective film includes a third end surface protective film having a high reflectivity for the wavelength of the luminescent radiation. However, Kozaki discloses: GaN substrate (101) (Figure 1, [0142]). It would have been obvious to one having

ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by growing the laser device on a GaN substrate in order to prevent a large number of dislocations from forming during growth. Kume et al. disclose: absorbing layer (15A) that absorbs light emitted from the active layer (17) (Figure 1, [0067]). It is inherent that the absorbing layer will emit luminescent radiation after absorbing light from the active layer and the emitted radiation will be a longer wavelength than the wavelength of the emitted light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by incorporating an absorbing layer into the substrate in order to prevent the leakage of spontaneous emission. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by modifying the reflectivity of the first end surface protective film and adding a third end surface protective film with a higher reflectivity for wavelength the luminescent radiation and lower reflectivity for the wavelength of the emitted light in order to increase the laser output power and prevent the leakage of spontaneous emission.

7. Regarding claim 13, Tojo et al. disclose: a nitride semiconductor layer that has a n-type semiconductor layer (23), an active layer (25), a p-type semiconductor layer (27) laminated on or above a substrate (11), and has a stripe shaped waveguide region for laser light (Figure 1, [0031]-[0033]); end surface protective films (43, 44) on the both

end surface of resonance sandwiching the waveguide region (Figure 1, [0038]), end surface protective film (43) has a low reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]); at least one of the end surface protective film (43, 44) covers the stripe shaped waveguide region or an emission side end surface of resonance (Figure 1, [0031]-[0033]). Tojo et al. do not disclose: a nitride semiconductor substrate, luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light, and at least one of the end surface protective film have a high reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region, the luminescent radiation region has a lower dislocation density as compared with the periphery thereof. However, Kozaki discloses: GaN substrate (101) (Figure 1, [0142]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by growing the laser device on a GaN substrate in order to prevent a large number of dislocations from forming during growth. Kume et al. disclose: absorbing layer (15A) that absorbs light emitted from the active layer (17) (Figure 1, [0067]). It is inherent that the absorbing layer will emit luminescent radiation after absorbing light from the active layer and the emitted radiation will be a longer wavelength than the wavelength of the emitted light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by incorporating an absorbing layer into the substrate in order to prevent the leakage of spontaneous emission. It would

have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by forming the spontaneous emission layer with a lower dislocation density in order to absorb more light from the active layer and prevent the leakage of spontaneous emission. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by modifying the reflectivity the one of the protective films so that the reflectivity is higher for the wavelength of the luminescent radiation in order to prevent the leakage of spontaneous emission.

8. Regarding claim 14, Tojo et al. disclose: a nitride semiconductor layer that has a n-type semiconductor layer (23), an active layer (25), a p-type semiconductor layer (27) laminated on or above a substrate (11), and has a stripe shaped waveguide region for laser light (Figure 1, [0031]-[0033]); end surface protective films (43, 44) on the both end surface of resonance sandwiching the waveguide region (Figure 1, [0038]), end surface protective film (43) has a low reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]); at least one of the end surface protective film (43, 44) covers the stripe shaped waveguide region or an emission side end surface of resonance (Figure 1, [0031]-[0033]). Tojo et al. do not disclose: a nitride semiconductor substrate, luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light, and at least one of the end surface protective film have a high reflectivity

for the wavelength of the luminescent radiation from the luminescent radiation region, the luminescent radiation region has a high impurity concentration as compared with the periphery thereof. However, Kozaki discloses: GaN substrate (101) (Figure 1, [0142]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by growing the laser device on a GaN substrate in order to prevent a large number of dislocations from forming during growth. Kume et al. disclose: absorbing layer (15A) that absorbs light emitted from the active layer (17) and absorbing layer with a higher impurity concentration than the active layer (Figure 1, [0067]). It is inherent that the absorbing layer will emit luminescent radiation after absorbing light from the active layer and the emitted radiation will be a longer wavelength than the wavelength of the emitted light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by incorporating an absorbing layer into the substrate in order to prevent the leakage of spontaneous emission. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by modifying the reflectivity the one of the protective films so that the reflectivity is higher for the wavelength of the luminescent radiation in order to prevent the leakage of spontaneous emission.

9. Regarding claim 15, Tojo et al. as modified disclose the claimed invention except impurity is at leas tone element selected from the group consisting of H, O, C, and Si. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the doping material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin,* 125 USPQ 416.

10. Regarding claim 16, Tojo et al. disclose: a nitride semiconductor layer that has a n-type semiconductor layer (23), an active layer (25), a p-type semiconductor layer (27) laminated on or above a substrate (11), and has a stripe shaped waveguide region for laser light (Figure 1, [0031]-[0033]); end surface protective films (43, 44) on the both end surface of resonance sandwiching the waveguide region (Figure 1, [0038]), end surface protective film (43) has a low reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]), emission wavelength of 400 nm ([0004]); at least one of the end surface protective film (43, 44) covers the stripe shaped waveguide region or an emission side end surface of resonance (Figure 1, [0031]-[0033]). Tojo et al. do not disclose: a nitride semiconductor substrate, luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light, and at least one of the end surface protective film have a high reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region; the luminescent radiation has a

wavelength of 550-600nm. However, Kozaki discloses: GaN substrate (101) (Figure 1, [0142]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by growing the laser device on a GaN substrate in order to prevent a large number of dislocations from forming during growth. Kume et al. disclose: absorbing layer (15A) that absorbs light emitted from the active layer (17) (Figure 1, [0067]). It is inherent that the absorbing layer will emit luminescent radiation after absorbing light from the active layer and the emitted radiation will be a longer wavelength than the wavelength of the emitted light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by incorporating an absorbing layer into the substrate in order to prevent the leakage of spontaneous emission. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by modifying the reflectivity the one of the protective films so that the reflectivity is higher for the wavelength of the luminescent radiation in order to prevent the leakage of spontaneous emission. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the emission wavelength of the luminescent radiation region, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

11. Regarding claim 18 and 19, Kume et al. disclose: absorbing layer (15A) that absorbs light emitted from the active layer (17) (Figure 1, [0067]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by forming the light absorbing in a stripe shape below the waveguide region and substantially parallel to the waveguide region in order to prevent leakage of spontaneous emission.

12. Regarding claim 20, Tojo et al. disclose: a nitride semiconductor layer that has a n-type semiconductor layer (23), an active layer (25), a p-type semiconductor layer (27) laminated on or above a substrate (11), and has a stripe shaped waveguide region for laser light (Figure 1, [0031]-[0033]); end surface protective films (43, 44) on the both end surface of resonance sandwiching the waveguide region (Figure 1, [0038]), end surface protective film (43) has a low reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]); at least one of the end surface protective film (43, 44) covers the stripe shaped waveguide region or an emission side end surface of resonance (Figure 1, [0031]-[0033]). Tojo et al. do not disclose: a nitride semiconductor substrate, luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light, and at least one of the end surface protective film have a high reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region, waveguide region is formed in a region that is spaced away from the luminescent

radiation region. However, Kozaki discloses: GaN substrate (101) (Figure 1, [0142]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by growing the laser device on a GaN substrate in order to prevent a large number of dislocations from forming during growth. Kume et al. disclose: absorbing layer (15A) that absorbs light emitted from the active layer (17) (Figure 1, [0067]). It is inherent that the absorbing layer will emit luminescent radiation after absorbing light from the active layer and the emitted radiation will be a longer wavelength than the wavelength of the emitted light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by incorporating an absorbing layer into the substrate in order to prevent the leakage of spontaneous emission. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by modifying the reflectivity the one of the protective films so that the reflectivity is higher for the wavelength of the luminescent radiation in order to prevent the leakage of spontaneous emission. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by forming the light absorbing in a stripe shape below and spaced away from the waveguide region and substantially parallel to the waveguide region in order to prevent leakage of spontaneous emission.

13. Claims 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tojo et al. (2004/0105473) in view of Kume et al. (2004/0213315) Kozaki (2002/0053676), and Yoshida et al. (6,057,565).

14. Regarding claim 6, Tojo et al. disclose: a nitride semiconductor layer that has a n-type semiconductor layer (23), an active layer (25), a p-type semiconductor layer (27) laminated on or above a substrate (11), and has a stripe shaped waveguide region for laser light (Figure 1, [0031]-[0033]); end surface protective films (43, 44) on the both end surface of resonance sandwiching the waveguide region (Figure 1, [0038]), rear side end surface protective film with a second end surface protective film (44) having a high reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]), emission end surface protective film (43) has a low reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]); the emission side end surface protective film (43) covers the stripe shaped waveguide region or an emission side end surface of resonance (Figure 1, [0031]-[0033]). Tojo et al. do not disclose: a nitride semiconductor substrate, luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light, rear side end surface protective film including a first end surface protective film having a higher reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region, the emission side end surface protective film includes a third end surface protective film having a high reflectivity for the wavelength of the luminescent radiation. However, Kozaki discloses:

GaN substrate (101) (Figure 1, [0142]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by growing the laser device on a GaN substrate in order to prevent a large number of dislocations from forming during growth. Kume et al. disclose: absorbing layer (15A) that absorbs light emitted from the active layer (17) (Figure 1, [0067]). It is inherent that the absorbing layer will emit luminescent radiation after absorbing light from the active layer and the emitted radiation will be a longer wavelength than the wavelength of the emitted light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by incorporating an absorbing layer into the substrate in order to prevent the leakage of spontaneous emission. Yoshida et al. disclose: multi-layer reflective film used to improve reflection factor on the laser emission surface (Col 14, Lines 1-12). It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by adding a reflective film with a higher reflectivity for the wavelength of the luminescent radiation over the film (44) on the rear side end surface in order to prevent the leakage of spontaneous emission and also adding a reflective film with a higher reflectivity for wavelength the luminescent radiation to the over film (43) on the emission side end surface in order to prevent leakage of spontaneous emission.

15. Regarding claim 7, please see the rejection for claim 6.

16. Regarding claim 8, please see the rejection for claim 6.

17. Regarding claim 9, Tojo et al. disclose: a nitride semiconductor layer that has a n-type semiconductor layer (23), an active layer (25), a p-type semiconductor layer (27) laminated on or above a substrate (11), and has a stripe shaped waveguide region for laser light (Figure 1, [0031]-[0033]); end surface protective films (43, 44) on the both end surface of resonance sandwiching the waveguide region (Figure 1, [0038]), rear side end surface protective film with a second end surface protective film (44) having a high reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]), emission end surface protective film (43) has a low reflectivity for the wavelength of the emitted light from the active layer (Figure 1, [0038]); the emission side end surface protective film (43) covers the stripe shaped waveguide region or an emission side end surface of resonance (Figure 1, [0031]-[0033]). Tojo et al. do not disclose: a nitride semiconductor substrate, luminescent radiation region that absorbs light emitted from the active layer and emits luminescent radiation with a wavelength longer than the wavelength of the emitted light, rear side end surface protective film including a first end surface protective film having a higher reflectivity for the wavelength of the luminescent radiation from the luminescent radiation region, the emission side end surface protective film includes a third end surface protective film having a high reflectivity for the wavelength of the luminescent radiation. However, Kozaki discloses:

GaN substrate (101) (Figure 1, [0142]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by growing the laser device on a GaN substrate in order to prevent a large number of dislocations from forming during growth. Kume et al. disclose: absorbing layer (15A) that absorbs light emitted from the active layer (17) (Figure 1, [0067]). It is inherent that the absorbing layer will emit luminescent radiation after absorbing light from the active layer and the emitted radiation will be a longer wavelength than the wavelength of the emitted light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by incorporating an absorbing layer into the substrate in order to prevent the leakage of spontaneous emission. Yoshida et al. disclose: multi-layer reflective film used to improve reflection factor on the laser emission surface (Col 14, Lines 1-12). It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by adding a reflective film with a higher reflectivity for the wavelength of the luminescent radiation over the film (44) on the rear side end surface in order to prevent the leakage of spontaneous emission and also adding a reflective film with a higher reflectivity for wavelength the luminescent radiation to the over film (43) on the emission side end surface in order to prevent leakage of spontaneous emission. The films are placed next to one another.

18. Regarding claim 10, see the rejection for claim 9.

19. Regarding claim 11, Tojo et al. disclose: second end surface protective film is in contact with the nitride semiconductor layer (see rejection for claim 9).

20. Regarding claim 12, see rejection for claim 9.

21. Claims 21, 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Tojo et al. (2004/0105473) in view of Kume et al. (2004/0213315) and Kozaki (2002/0053676) and Wada et al. (2002/0141321).

22. Regarding claim 21, Tojo et al. as modified disclose the claimed invention except a detector that detect the light emission of the nitride semiconductor device, wherein the detector has a spectral sensitivity in a wavelength λex of the luminescent radiation higher than a wavelength of λld of the emitted light of the nitride semiconductor laser. However, Wada et al. disclose: GaN laser device (1) optically coupled to a photodetector (9) (Figure 1, [0091]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by coupling a photodetector to the laser device in order to monitor the light emitting from the luminescent region.

23. Regarding claim 22, Tojo et al. as modified disclose the claimed invention except a detector that detect the light emission of the nitride semiconductor device, wherein the detector has a spectral sensitivity in a wavelength λex of the luminescent radiation higher than a wavelength of λld of the emitted light of the nitride semiconductor laser. However, Wada et al. disclose: GaN laser device (1) optically coupled to a photodetector (9) (Figure 1, [0091]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Tojo et al. by coupling a photodetector to the laser device in order to monitor the light emitting from the luminescent region.

Response to Arguments

24. Applicant's arguments filed 08/07/2008 have been fully considered but they are not persuasive.

25. Regarding the Applicant's argument that Tojo et al. specifies the refractive index is set lower than the GaN based laser oscillation region and higher than the sapphire substrate and that replacing the sapphire substrate with a GaN substrate violates that relationship. The Examiner does not agree. Tojo discloses: refractive index of the reflecting film (43) is set to a value between the refractive index of the substrate and the effective refractive index ([0039]). Tojo does not disclose that the substrate must be sapphire or GaN cannot used as a substrate material. Therefore, the Examiner believes GaN can be used as a substrate to modify the device of Tojo and the refractive

index of the reflective film (43) can be changed accordingly to accommodate the GaN substrate.

26. Regarding the Applicant's argument that Tojo et al. teaches away from the present invention because it is a heterogeneous structure while the Applicant's invention is a homogeneous structure. The Examiner does not agree. Applicant's structure is clearly a heterogeneous structure because it is a laser device with a substrate and layers of different semiconductor materials grown upon the substrate. Therefore, Tojo et al. does not teach away from the present invention since both are directed toward heterogeneous structures.

27. In response to applicant's argument that the absorbing layer 15A of Kume et al. could not prevent leakage of the spontaneous emission to the outside , it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

28. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XNNING NIU whose telephone number is (571)270-1437. The examiner can normally be reached on M-T, 7:30-5:00 EST, Alternate Fridays 7:30-4:00 ES.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Xinning(Tom) Niu/
Examiner, Art Unit 2828
11/06/2008

/Minsun Harvey/
Supervisory Patent Examiner, Art Unit 2828